

Cat. No. 13-1275

OWNER'S MANUAL

Please read before using this equipment.

SYSTEM 728

MINI STEREO COMPONENT SYSTEM

OPTIMUS®

FEATURES

Your Optimus System 728 Mini Stereo Component System is a versatile and high quality sound system. Its components include a 3-disc carousel CD changer with 32-track memory, AM/FM stereo tuner with 20-station presets, and dual cassette players with high-speed dubbing.

You can operate many of the system's functions with its remote control. The supplied speakers which include 5-inch woofers and tweeters, let you immediately begin using your system.

Its features include:

AM/FM Stereo Tuner

Selectable Electronic Graphic Equalizer æ lets you select any of the preset sound characteristic curves (normal, pop, rock, and classic).

Preset Tuning Memories æ let you store up to 20 of your favorite stations for quick tuning.

Extended Bass æ lets you emphasize low-bass sound.

CD Changer

Automatic CD Changer æ lets you load and play up to three CDs.

Automatic Search æ lets you quickly select any track on the loaded CDs.

Repeat Play æ repeats a single track, all tracks on a single CD, all CDs in the CD compartment, or a programmed sequence.

Random Play æ plays all the loaded CD's tracks in random order.

Sequence Track Programming æ lets you program up to 32 tracks to play in any order you choose.

5- or 3-Inch CD Compatible æ lets you play 5- or 3-inch CDs.

Dual Cassette Player

Normal or High-Speed Dubbing æ lets you dub tapes at normal or twice normal speed.

Consecutive Play æ automatically plays one side of two tapes in sequence.

Auto-Stop æ automatically stops the tape when it finishes playing or recording and when it fast-forwards or rewinds to the end of the side. This protects the tape and tape-handling parts.

General

Auxiliary Input Jacks \otimes let you connect an external audio input source to your system so you can listen to or record from it.

Microphone Mixing \otimes lets you sing along with the music you are playing.

Important: Most material on compact discs and prerecorded tapes is copyrighted. Unauthorized duplication of copyrighted material is a violation of the copyright laws of most countries and such duplication may result in fines and/or imprisonment. Note, however, that in the United States, it is not a violation of U.S. copyright laws for a consumer to use an audio recording device to duplicate musical recordings for noncommercial (personal) use.

Compact discs that you can play on your system's CD player have this mark on them.

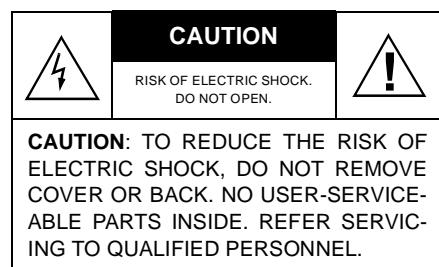
Read this manual carefully. It will help you get the most enjoyment from your system.

Your system's serial number is located on the back panel. We recom-

mend you record your system's serial number here.

Serial Number:

Warning: To prevent fire or shock hazard, do not expose this system to rain or moisture.



This symbol is intended to alert you to the presence of uninsulated dangerous voltage within the system's enclosure that might be of sufficient magnitude to constitute a risk of electric shock. Do not open the system's case.



This symbol is intended to inform you that important operating and maintenance instructions are included in the literature accompanying this system.

Warning: This system uses a laser light beam. Only a qualified service person should remove the cover or attempt to service this device, due to possible eye injury.

FCC INFORMATION

This system complies with the limits for a Class B digital device as specified in part 15 of *FCC Rules*. These limits provide reasonable protection against TV or radio interference in a residential area. However, your system might cause TV or radio interference even when it is operating properly.

To eliminate interference, you can try one or more of the following corrective measures.

- Reorient or relocate the TV or radio's receiving antenna.
- Increase the distance between the system and the TV or radio.
- Use outlets on different electrical circuits for the system and the TV or radio.

Consult your local Radio Shack store if the problem still exists.

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PREPARATION

Note: Complete all connections before connecting to AC power and turning it on.

CONNECTING THE SPEAKERS

1. Press the red speaker terminal tab labeled **SPEAKER R. Ch +** on the back of the system, insert the stripped end of the right speaker's striped wire into the terminal, then release the tab.
2. Press the black speaker terminal tab labeled **SPEAKER R. Ch -** on the back of the system, insert the stripped end of the right speaker's other wire into the terminal, then release the tab.
3. Repeat Steps 1 and 2 to connect the left speaker to **SPEAKER L. Ch +** and **-** terminals.

CONNECTING AN EXTERNAL AUDIO SOURCE

To connect an external audio source (such as a CD player or a cassette deck) to your system, connect the source's left and right line level output jacks to the **AUX IN R** and **L** jacks on the back of your system.

CONNECTING AN EXTERNAL ANTENNA

You can attach an FM or VHF antenna (not supplied) to the 300 ohm **EXT. ANT.** terminals on the back of the system.

If you have an outside VHF TV antenna, you can use a signal splitter with a 300-ohm output to connect your stereo system and TV set to the same antenna. Your local Radio Shack store has a wide selection of antennas, connectors, and splitters.

INSTALLING THE REMOTE CONTROL'S BATTERIES

The remote control requires two AA batteries (not supplied) for power. We recommend alkaline batteries, such as Radio Shack Cat. No. 23-557.

Follow these steps to install batteries.

1. Press down and slide the battery compartment cover in the direction of the arrow.

2. Install the batteries as indicated by the polarity symbols (+) and (-) marked inside the compartment.

3. Replace the cover.

Caution: If you are not going to use the remote control for a month or more, remove its batteries. Weak batteries can leak damaging chemicals.

Note: If the remote control operates erratically or does not work, replace both batteries.

CONNECTING TO POWER

After you complete all connections, plug the music system's supplied power cord into a standard AC outlet. The STAND BY indicator lights, and **CLO** and **AM 12:00** appear on the display (see "Setting the Clock").

Warning: To prevent electric shock, the AC power cord plug's blades are polarized and fit a polarized AC outlet only one way. If you have difficulty inserting the plug, do not force it. Turn it over and reinsert it.

OPERATION

TURNING POWER ON/ OFF

Warning: To protect your hearing, set **VOLUME** to **MIN** before you turn on the system.

Press **POWER** to turn on the system. The **STAND BY** indicator turns off and the indicator above **CD**, **TUNER**, **TAPE**, or **AUX** lights.

Notes:

- If the indicator above **CD**, **TAPE**, or **AUX** appears, **CLO** and the time appear on the display.
- If the indicator above **TUNER** appears, the AM or FM station previously selected appears on the display.

SETTING THE CLOCK

1. If necessary, press **DISPLAY** so **CLO** and the time appear on the display.
2. Press **MEMORY**. **CLO** flashes on the display.

Note: If you do not press **TUNING** \swarrow or \searrow within 10 seconds after you press **MEMORY**, **CLO** stops flashing on the display. Start again from Step 2.

3. While **CLO** flashes, repeatedly press **TUNING** \swarrow to set the desired hour. If you press and hold down **TUNING** \swarrow , the hour advances continuously.

Note: **AM** or **PM** appears when you set an AM or PM hour.

4. While **CLO** flashes, repeatedly press **TUNING** \searrow to set the desired minutes. If you press and hold down **TUNING** \searrow , the minutes advance continuously.
5. Press **MEMORY** again when you finish setting the time, or just wait 10 seconds.

BASIC OPERATION

Follow these steps to operate your system.

1. Press **CD**, **TUNER**, **TAPE**, or **AUX** to select the desired audio source.

2. If you select **TUNER**, select the desired station (see "Using the Tuner").

If you select **CD**, **TAPE**, or **AUX**, start the selected audio source (see "Using the CD Changer" or "Using the Cassette Deck").

3. Adjust **VOLUME** to a comfortable listening level.

4. Adjust **BALANCE** until you can hear the sound equally from the left and right speakers.

5. Select the desired equalization by pressing **NORMAL**, **POP**, **ROCK**, or **CLASSIC** (see "Using the Electronic Graphic Equalizer").

6. Press **E-BASS** to emphasize bass sounds. To return to normal bass sounds, press **E-BASS** again.

7. To turn off the system, press **POWER** so the STAND BY indicator lights.

USING HEADPHONES

You can use headphones (not supplied) to listen in privacy. Insert the headphones' 1/8-inch (3.5 mm) plug into the **PHONES** jack.

Listening Safely

To protect your hearing, follow these guidelines when you use headphones.

- Do not listen at extremely high volume levels. Extended high-volume listening can lead to permanent hearing loss.
- Set the volume to the lowest setting before you begin listening. After you begin listening, adjust the volume to a comfortable level.
- Once you set the volume, do not increase it. Over time, your ears adapt to the volume level, so a volume level that does not cause discomfort might still damage your hearing.

Notes:

- Your local Radio Shack store sells a wide selection of headphones.
- Connecting headphones automatically disconnects the speakers.

DISPLAYING THE TIME

To display the clock while you use the radio, press **DISPLAY**. To return to the radio display, press **DISPLAY** again.

USING THE MUTE BUTTON

The **MUTE** button lets you temporarily turn off the sound. Press **MUTE** once to turn it off. Press **MUTE** again to restore sound.

USING THE ELECTRONIC GRAPHIC EQUALIZER

You can select any one of four preset sound characteristics using the system's electronic graphic equalizer. Each setting distinctly changes the music's character or tone.

Setting	Sound
NORMAL	Normal sound
POP	More presence of vocals and midrange
ROCK	Powerful sound emphasizing treble and bass
CLASSIC	Sound enriched with heavy bass and fine treble

USING THE TIMER

You can set the timer to automatically turn on the system, play from the tuner or a cassette tape (not from a CD), then turn off the system.

Note: You can use the system while the timer is set.

Setting the Timer

1. While the current time appears on the display, press 1. **TIM** **ON** flashes on the display.

Note: If **TUNER** is selected, press **DISPLAY** first so the current time appears on the display.

Note: If you do not press **TUNING** \wedge or \vee within 10 seconds after you press 1, **TTM ON** disappears from the display. Start again from Step 1.

2. While **TTM ON** flashes, repeatedly press **TUNING** \vee to set the hour of the desired start time.

Notes:

- Press and hold down **TUNING** \vee to continuously advance the hour.
- **AM** or **PM** appears when you set an AM or PM hour.

3. While **TTM ON** continues to flash, repeatedly press **TUNING** \wedge to set the minutes of the desired start time.

Note: Press and hold down **TUNING** \wedge to continuously advance the minutes.

4. Press 2. **TTM OFF** flashes on the display.

5. While **TTM OFF** flashes, repeatedly press **TUNING** \vee to set the hour of the desired end time.

Notes:

- Press and hold down **TUNING** \vee to continuously advance the hour.
- **AM** or **PM** appears when you set an AM or PM hour.

6. While **TTM OFF** continues to flash, repeatedly press **TUNING** \wedge to set the minutes of the desired end time.

Note: Press and hold down **TUNING** \wedge to continuously advance the minutes.

7. When you finish setting the alarm timer, press **DISPLAY** to return to the current time display, or wait 10 seconds for the system to automatically return to the current time display.

Turning the Timer On/Off

1. Press **TUNER** or **TAPE** to select the desired audio source.
2. If you selected **TUNER**, select the desired station (see "Using the Tuner") and adjust **VOLUME** to a comfortable listening level.
If you selected **TAPE**, insert the desired tape, press **PLAY**, and adjust **VOLUME** to a comfortable listening level (see "Using the Cassette Deck").
3. Press **TIMER** to turn on the timer. The system turns off.

When the selected start time appears on the display, the system automatically turns on, plays, and turns off at the selected end time. The system turns on again the next day at the set start time.

To turn off the timer, simply press **TIMER** again.

Notes:

- The system's controls do not work when **TIMER** is pushed to on. To operate the system, you must turn off the timer.
- If you played a cassette tape with the timer, and the timer turns the system off before the tape ends, press **STOP/EJECT** as soon as possible to release the tape from the mechanism.

Displaying the Timer

To display the timer's start time, press 1 so **TIM|ON** and the start time appear for 10 seconds. To display the timer's finish time, press 2 so **TIM|OFF** and the finish time appear for 10 seconds.

USING THE SLEEP TIMER

You can set the system to play up to 90 minutes, then automatically turn off.

1. Press **CD**, **TUNER**, **TAPE**, or **AUX** to select the desired audio source.
2. Tune to the desired AM or FM radio station, or start the selected CD, tape, or your external audio source.
3. Press **POWER** to turn off the system.
4. To turn on the sleep timer, press and release **SLEEP**. **SLE** and **90** appear on the display.

To set the sleep timer to a sleep time, press and hold down **SLEEP** until the desired sleep time appears on the display. The displayed sleep time decreases in 10-minute steps.

The system turns itself off after the amount of time you selected. To turn off the sleep timer sooner, press **SLEEP** again so **SLE** disappears from the display.

USING THE REMOTE CONTROL

The remote control's buttons have the same functions as the corresponding buttons on the main system.

To use the remote control, point it toward the remote sensor on the left of the system's AM/FM STEREO RECEIVER display and press the desired buttons.

Notes:

- Make sure you have a clear path between the remote control and the sensor.
- Weak batteries or direct sunlight on the remote sensor might reduce the remote control's operating range.

USING THE TUNER

Press **TUNER** to use the system's tuner. The indicator above **TUNER** lights.

Note: When you select **TUNER**, the system automatically tunes to the station that was playing when the system was turned off or when it was last set to **TUNER**.

You can tune to AM or FM radio stations using manual, seek, or memory tuning.

MANUAL TUNING

1. Press **BAND** to select the desired AM or FM band. **AM** or **FM** appears on the display.

Notes:

- The system uses a built-in ferrite antenna for AM reception. For the best AM reception, rotate the system.
 - For the best FM reception, see "Connecting an External FM Antenna."
2. Use **FM MODE/AM BEAT** to select the desired AM or FM band's mode.
If you selected FM:
 - Press it in to select stereo. The FM STEREO indicator lights when you receive an FM broadcast in stereo.
 - Press it out to select monaural. The sound is no longer in stereo, but reception should improve.If you selected AM, press it in or out to the position that gives the best reception.
 3. Repeatedly press **TUNING** \wedge or \vee to tune up or down the selected band. If you press and hold down **TUNING** \wedge or \vee , the stereo tunes quickly.

AUTOMATIC SEEK TUNING

1. Press **BAND** to select the desired AM or FM band. **AM** or **FM** appears on the display.
2. Press **TUNING AUTO**. The system automatically searches up the band and stops when it finds the next strong station.

2. Using either manual or automatic seek tuning, select the station you want to store, then press **MEMORY**.

3. While **[MEM]** appears on the display, follow these guidelines to store up to 10 stations in memory.

Note: You must store a station within 3 seconds. If **[MEM]** disappears before you make the following entries, simply repeat this step.

- To store stations into memory locations 1-5, press a memory location button (1-5). The station is stored, **[MEM]** disappears, and the display shows the frequency.

MEMORY TUNING

You can store up to 10 AM and 10 FM stations in memory.

Storing Stations in Memory

Note: You can assign one frequency to each memory location. When you assign another frequency to the same memory location, the new frequency replaces the first one.

1. Press **BAND** to select the desired AM or FM band. **AM** or **FM** appears on the display.

- To store stations into memory locations 6-10, press **+5** then a memory location button (1-5). The station is stored, **MEM-** disappears, and the display shows the frequency.

Note: This increases the memory location number by 5. For example, if you press **+5**, then press memory location button **2**, the radio stores the frequency you selected into memory location **7**.

(illus - show the balloon pointing at the **+5** button)

4. Repeat Steps 1-3 to program stations in the other band.

Manually Tuning to a Preset Station

Press the desired memory location button (1 through 5) to directly select a radio station stored in memory. For preset stations 6 through 10, press **+5** then the desired memory location button.

Scanning the Preset Stations

Press **M/SCAN**. The system scans the preset stations and plays each station for 5 seconds.

Note: Repeatedly press **M/SCAN** to quickly step through the stored stations.

To stop scanning at a desired station, within 5 seconds after the tuner stops on that station, press **DISPLAY** or that station's memory location button.

USING THE CD CHANGER

LOADING A CD

1. Press **CD**.

2. Press **OPEN/CLOSE** to open the CD compartment.

Note: The CD carousel has three trays, each labeled with a number, but only two trays show at a time when you open the CD compartment.

3. Place a CD in either (or both) of the exposed trays, label side up.

- Note:** To load a CD in the third tray, press **CD SKIP**. The carousel rotates, exposing the other tray.
4. After you load the CDs, press **OPEN/CLOSE** to close the CD compartment. The system displays the current tray number, and the total number of tracks and total playing time of the CD in the tray.

PLAYING A CD

To play a CD, simply press **PLAY/PAUSE** after you load it. The selected CD begins to play from Track 1. The display shows \leftarrow , the current tray number, the CD's current track number, the track's elapsed time, and the current track number indicator flashes. The system plays all the loaded CDs once.

Notes:

- After you load a CD, do not press either **SKIP**, $\triangleleft\triangleleft$ or $\triangleright\triangleright$ before the track number indicators appear on the display. Otherwise **NO DISC** appears on the display and you must reset the CD player by pressing **OPEN/CLOSE** twice (to open and then close the CD compartment.)
- If a tray does not contain a CD, the system skips that tray and automatically plays the CD in the next tray.
- To temporarily stop play, press **PLAY/PAUSE**. **Y** appears, the elapsed timer stops counting, and the current track number indicator flashes on the display. To resume play, press **PLAY/PAUSE** again.

To stop play, press **STOP**.

SELECTING ANOTHER CD

To select another CD, press **CD SKIP** before or during play.

If the system is playing a CD, it stops playing it and begins playing the first track of the selected CD.

AUTOMATIC SEARCH

The Automatic Search feature lets you quickly locate the beginning of any track on a CD, including the track currently playing. You can use Automatic Search when a CD is playing or stopped.

If a CD is playing:

- Press **<< SKIP** once to skip back to the beginning of the current track.
- Repeatedly press **<< SKIP** to skip backward to the beginning of the desired track.
- Repeatedly press **SKIP >>** to skip forward to the beginning of the desired track.

If the CD is stopped, repeatedly press **SKIP >>** or **<< SKIP** until the display shows the number of the track you want to play, then press **PLAY/PAUSE**. The CD player starts playing the selected track.

RANDOM PLAY

This feature randomly selects and plays tracks from all loaded CDs.

Note: To randomly select tracks from only one or two CDs, you must load only those CDs in the CD tray.

1. Press **STOP** to cancel any CD function.

2. Press **RANDOM**. **RANDOM** appears on the display.

3. Press **PLAY/PAUSE**. After one track plays, the system randomly selects another track and plays it and then continues until all tracks on all loaded CDs are played.

Notes:

- To repeat the current track, press **◀◀ SKIP**. To play the next random track, press **SKIP ▶▶**.
- To repeat random play, before the last track ends, press **REPEAT** until **REPEAT ALL** appears on the display.
- To stop random play, press **STOP** then **RANDOM**. **RANDOM** disappears from the display.

REPEAT PLAY

You can repeat a single track on a selected CD, all tracks on a selected CD, all tracks on all loaded CDs, or a programmed sequence.

Note: To cancel repeat play at any time, repeatedly press **REPEAT** until **REPEAT** disappears from the display.

Repeating a Single Track

To repeat a single track, press **REPEAT** once while the desired track is playing. **REPEAT ONE** appears on the display, and the CD player continuously replays the track.

Repeating All Tracks on a Selected CD

To repeat all tracks on a selected CD, press **CD SKIP** to select the desired CD. Then repeatedly press **REPEAT** until **REPEAT ONE DISC** appears.

Repeating All Tracks on All Loaded CDs

To repeat all tracks on all loaded CDs, repeatedly press **REPEAT** until **REPEAT ALL DISC** appears.

Repeating a Programmed Sequence

To repeat a programmed sequence, press **REPEAT** while the programmed sequence is playing. **REPEAT ALL** appears, and the CD player continuously replays the programmed sequence.

PROGRAMMED PLAY

You can program up to 32 tracks from any loaded CDs to play in any order you choose.

Programming and Playing a Sequence of Tracks

1. Press **STOP** to cancel any CD function.
2. Press **PROGRAM**. The display shows **MEMORY - - - P-01** (the current position in the programmed sequence).
3. Press **CD SKIP** to select the CD containing the tracks you want to store.
4. Press **<< SKIP** or **SKIP >>** to select the CD's track number you want to store.
5. Press **PROGRAM**. The track is stored and the display shows **MEMORY - - - P-02**.
6. Repeat Steps 3–5 to program additional tracks.

Note: **FULL** appears on the display after you store the 32nd track. If you try to program more

than 32 tracks, the new track replaces the 32nd track.

7. Press **PLAY/PAUSE**. The CD player plays the tracks in the programmed order. **MEMORY**, the tray number, the current track number, and the track's elapsed time appear on the display.

Notes:

- During play, briefly press or repeatedly press **<< SKIP** or **SKIP >>** as required, to select a previous or a following programmed track.
- You cannot use random play or display the CD's remaining time while a programmed sequence is stored.
- Pressing **CD SKIP** has no effect while a programmed sequence plays.

Reviewing the Programmed Sequence

While play is stopped, repeatedly press **PROGRAM** to review the programmed sequence.

Replacing/Adding a Track in a Programmed Sequence

1. While play is stopped, repeatedly press **PROGRAM** until the track position number you want to replace or add to appears on the display.
2. Press **CD SKIP** to select the CD containing the new track.
3. Press **<< SKIP** or **SKIP >>** until the desired track appears on the display.
4. Press **PROGRAM**. The new track replaces a previous track or is added to the programmed sequence.

Clearing the Programmed Sequence

To clear the entire programmed sequence, press **STOP** while play is stopped, or press **OPEN/CLOSE**.

USING THE CASSETTE DECK

The system has two cassette decks. You can use Deck 1 for normal playback, consecutive play, and dubbing (recording). You can use Deck 2 for normal playback and consecutive play.

Both decks (1 and 2) have a full-release auto-stop system to protect tapes and prevent pinch roller damage. When a tape reaches the end while playing, recording, fast-forwarding, or rewinding, the tape mechanism automatically stops.

LOADING A CASSETTE TAPE

Notes:

- Use the control buttons under the same deck where you loaded the tape.
- Before loading a cassette tape, take up any slack in the tape by turning one of the cassette's hubs with a pencil. If you do not remove excess slack, the tape might become tangled in the record/playback mechanism.

Follow these steps to load a cassette tape in either Deck 1 or Deck 2.

1. Press **TAPE**. The TAPE indicator lights.
2. Press **STOP/EJECT** on either Deck 1 or Deck 2 to open the cassette compartment door.

3. Load the cassette by placing it in the tape guides in the cassette compartment door, with its open edge down, the desired side facing out, and its full reel to the left.
4. Gently close the compartment door.

PLAYING A CASSETTE TAPE

Warning: To protect your hearing, set **VOLUME** to its lowest setting before you begin playing a cassette tape.

Follow these steps to play a cassette tape in either Deck 1 or Deck 2.

1. Load the cassette.
2. Press **PLAY** on the deck you are using. The tape plays until it reaches the end of the side, then it automatically stops.
3. Adjust **VOLUME** to the desired listening level.

4. To fast-forward or rewind the tape, press **STOP/EJECT** then press **FAST-F** or **REWIND** on the deck you are using.

To temporarily stop playback, press **PAUSE** on the deck you are using. Press **PAUSE** again to continue playback.

To stop playback, fast-forward, or rewind, press **STOP/EJECT** on the deck you are using.

5. To open the cassette compartment and remove the cassette tape, press **STOP/EJECT** while the cassette player is stopped.

USING CONSECUTIVE PLAY

You can set the tape player to play one side of a tape in Deck 2, then automatically play one side of a tape in Deck 1.

1. Load the cassette you want to hear first in Deck 2 and the second cassette in Deck 1.
2. Press **PLAY** on Deck 2. The cassette in Deck 2 plays.
3. While the cassette in Deck 2 is playing, press **PAUSE** then **PLAY** on Deck 1.

When the cassette in Deck 2 finishes playing, the cassette in Deck 1 automatically begins playback.

RECORDING

Notes:

- Be sure the erase-protection tab for the cassette you want to record on is in place (see "Preventing Accidental Erasure").
- The recording level is preset. Adjusting **E-BASS**, the graphic equalizer, or **VOLUME** does not affect the recording level or quality.

Dubbing Cassette Tapes

You can easily copy a tape by playing it in Deck 2 and recording it onto another tape in Deck 1. You can select between normal and high-speed dubbing, and you can monitor the tape as you dub it.

1. Load the cassette you want to copy from into Deck 2 and a blank cassette, or one you want to record over, into Deck 1.

2. To record at normal speed for the best quality sound, set **HIGH SPEED DUBBING** to **OFF**.

To record in half the normal recording time, set **HIGH SPEED DUBBING** to **ON**.

3. On Deck 1, press **PAUSE** then **RECORD**. **PLAY** on Deck 1 automatically locks down.

Caution: Do not force down **RECORD**. This can damage the recording mechanism.

4. On Deck 2, press **PLAY**. **PAUSE** on Deck 1 releases and the system copies the tape in Deck 2 onto the tape in Deck 1.

Notes:

- To monitor the tape while it is copying, adjust **VOLUME** to a comfortable listening level.
 - If you monitor the tape while high-speed dubbing, the sound is distorted.
5. To stop copying, press **STOP/EJECT** on Deck 1 and Deck 2.

When the tape in either deck reaches the end, that deck automatically turns off. If the cassette in the other deck has not run out of tape, that tape continues to record or play. If you were using high-speed dubbing, the continuing tape plays/records at normal speed (instead of high speed).

Copying a CD to a Cassette Tape

Follow these steps to copy the tracks from the loaded CDs to a cassette tape in Deck 1.

1. On Deck 1:

- Load a blank cassette tape, or one you want to record over.
- Press **PLAY** and let the tape play for about 5 seconds so it plays past the tape leader.
- Press **STOP/EJECT** to stop the tape.
- Press **PAUSE** then **RECORD**.

Caution: Do not force down **RECORD**. This can damage the recording mechanism.

2. Press **CD** to select the CD player.
3. Press **OPEN/CLOSE** to open the CD compartment, then load the desired CDs in the CD player.

Notes:

- To copy a programmed sequence, store the desired sequence before continuing with Step 4.
 - To copy a CD's tracks in random sequence, press **RANDOM** so **RANDOM** appears on the display before continuing with Step 4.
4. Simultaneously press **PAUSE** on Deck 1 and **PLAY/PAUSE** on the CD player. The system records from the CD onto the cassette tape.
5. To stop recording before it automatically stops, press **STOP** on the CD player, then press **STOP/EJECT** on Deck 1.

Recording from the Tuner or an External Audio Source

Follow these steps to record from the tuner or from an external audio source connected to the system, such as a VCR or other audio/video equipment.

1. On Deck 1:

- Load a blank cassette tape, or one you want to record over.
- Press **PLAY** and let the tape play for about 5 seconds so it plays past the tape leader.
- Press **STOP/EJECT** to stop the tape.
- Press **PAUSE** then **RECORD**.

Caution: Do not force down **RECORD**. This can damage the recording mechanism.

2. Press **TUNER** or **AUX** to select the desired audio source.
3. Select the desired station or start the selected audio source, then press **PAUSE** on Deck 1. The cassette records until it reaches the end of the side, then it automatically stops.
4. To stop recording before it automatically stops, press **STOP/EJECT** on Deck 1.

Timer Recording

You can set the system to automatically turn itself on, record from a selected audio source (such as the tuner or a cassette tape in Deck 2) onto a cassette tape in Deck 1, then turn itself off at the time you set.

1. Repeat Steps 1-7 in "Using the Timer," to set the start and end times and select the source you want to record from.

2. On Deck 1:

- Load a blank cassette tape, or one you want to record over.
- Press **PLAY** and let the tape play for about 5 seconds so it plays past the tape leader.
- Press **STOP/EJECT** to stop the tape.
- Press **PAUSE** then **RECORD**.

Caution: Do not force down **RECORD**. This can damage the record mechanism.

3. Press **TIMER** to turn on the timer.
4. Press **PAUSE** on Deck 1. At the preset time, the system turns itself on and records onto the cassette in Deck 1 until the end time is reached.

Caution: If the cassette's length is longer than the timer recording period, **RECORD** and **PLAY** stay locked down when the timer turns off. To prevent accidental tape tangling, press **STOP/EJECT** on Deck 1 as soon as possible after the timer turns off.

To turn off the timer, press **TIMER** until **TIM ON OFF** disappears from the display. If the tape length is longer than the timer setting, press **STOP/EJECT** on Deck 1.

MICROPHONE MIXING

Using an external microphone with a $\frac{1}{8}$ -inch plug (not supplied), you can sing along with selections on CDs or cassette tapes, or with a song played over the radio.

Warning: To prevent damage to your hearing, set **VOLUME** to its minimum level before you turn on the system.

Note: Your local Radio Shack sells a wide selection of microphones.

1. Connect an external microphone to the **MIC MIX** jack.

3. Select the desired station or start the selected audio source.
4. Adjust **VOLUME** to a comfortable listening level.

Note: The microphone input jack does not have an individual volume control.

5. Sing or talk into the microphone. The system mixes your voice with the selected audio source.

To record your voice and the audio source mixed together onto a cassette tape, follow the steps in "Copying a CD to a Cassette Tape" or "Recording from the Tuner or an External Audio Source."

When you finish mixing, remove the microphone's plug from the **MIC MIX** jack.

2. Press **CD**, **TUNER**, **TAPE**, or **AUX** to select the desired audio source.

CARE AND MAINTENANCE

Your Optimus System 728 Mini Stereo Component System is an example of superior design and craftsmanship. The following suggestions will help you care for the system so you can enjoy it for years.



Keep the system dry. If it gets wet, wipe it dry immediately. Liquids might contain minerals that can corrode the electronic circuits.



Handle the system gently and carefully. Dropping it can damage circuit boards and cases and can cause the system to work improperly.



Use and store the system only in normal temperature environments. Temperature extremes can shorten the life of electronic devices and distort or melt plastic parts.



Keep the system away from dust and dirt, which can cause premature wear of parts.



Wipe the system with a damp cloth occasionally to keep it looking new. Do not use harsh chemicals, cleaning solvents, or strong detergents to clean the system.

Modifying or tampering with the system's internal components can cause a malfunction and might invalidate your system's warranty and void your FCC authorization to operate it. If your system is not performing as it should, take it to your local Radio Shack store for assistance.

CD CARE TIPS

Even though a compact disc is very durable, treat the CD surface with care. We recommend the following precautions:

- Do not write on either side of the CD, particularly the non-label side (signals are read from the non-label side).
- Do not store CDs in high temperature, high-humidity locations. They might warp.
- Keep CDs dry. A water drop can act as a lens and affect the laser beam's focus.
- Always handle a CD by the edges to avoid fingerprints and always keep it in its protective case or sleeve when it is not in use. Fingerprints and scratches on the CD's surface can prevent the laser beam from correctly reading the digital information. If the CD gets scratched, use Scratch n' Fix (Radio Shack Cat. No. 42-127).

TAPE TIPS

Erasing a Cassette Tape

To erase a previously recorded section of a tape, simply record over it. To erase the entire cassette tape, let the tape record to the end with no source playing.

You can quickly erase both sides of a cassette tape using a bulk tape eraser (such as Cat. No. 44-232, not supplied), available at your local Radio Shack store.

Preventing Accidental Erasure

Cassette tapes have two erase-protection tabs \otimes one for each side. To protect a recording from being accidentally recorded over or erased, use a screwdriver to remove one or both of the cassette tape's erase-protection tabs.

(Needs an illus - show an erase protection tab being removed with a screwdriver.)

If you want to record on a tape side after you have removed the erase-protection tab, place a piece of strong plastic tape over that side's erase-protection hole. Be sure you cover only the hole originally covered by the erase-protection tab.

Note: Removing the erase-protection tabs does not prevent a bulk eraser from erasing a cassette tape.

Restoring Tape Tension and Sound Quality

After you play a cassette tape several times, the tape might become tightly wound on the reels. This can cause playback sound quality to deteriorate.

To restore the sound quality, fast-forward the tape from the beginning to the end of one side, then completely rewind it. Then loosen the tape reels by gently tapping each side of the cassette's outer shell on a flat surface.

Caution: Be careful not to damage the cassette when tapping it. Do not touch the exposed tape or allow any sharp objects near the cassette.

Cleaning the Tape Handling Parts

Dirt, dust or particles of the tape's coating can accumulate on the tape heads and other parts that the tape touches. This can greatly reduce the performance of the cassette player. Use the following cleaning procedure after every 20 hours of tape player operation. Your local Radio Shack store sells a wide selection of cassette cleaning supplies.

1. Disconnect power.
2. Open the cassette compartment doors.
3. Press **PLAY** on both decks to expose the tape-handling parts.
4. Use a cotton swab dipped in denatured alcohol or tape head cleaning solution to clean the record/play head, pinch roller, capstan, and erase head.

5. When you finish cleaning, press **STOP/EJECT** on both decks and close the cassette compartment doors.

SPECIFICATIONS

Cassette

Tape Speed	4.75 cm/sec
Wow and Flutter	0.35% WRMS
Frequency Response	125 Hz–8 kHz ± 4 dB
Recording System	AC Bias
Erase System	Magnetic

CD Player

Number of Tracks to be Programmed	32 Tracks
Frequency Response	40 Hz–16 kHz ± 3 dB
Dynamic Range	85 dB
Signal-to-Noise	(JIS-A) 75 dB
Harmonic Distortion (at 1 kHz)	0.5%
Separation (at 1 kHz)	50 dB
Sampling Frequency	44.1 kHz
Quantization Number	16 Bit
Oversampling	2 Times
Pick-Up System	Sanyo SF-91P
Optical Source	Sanyo SF-901
Wavelength	790 nm

General

Speaker Impedance.....	8 Ohms
Power Output.....	10 Watts per Channel
Dimensions of Unit.....	$14\frac{3}{16} \times 11\frac{7}{16} \times 14\frac{5}{16}$ Inches (HWD) (360 × 288 × 338 mm)
Dimensions of Each Speaker.....	$14\frac{3}{16} \times 7\frac{13}{16} \times 6\frac{11}{16}$ Inches (HWD) (360 × 200 × 175 mm)
Weight	27 lbs 5 oz (12.4 kg)
Power Supply.....	120V AC, 60 Hz, 48 W
Tuning Range.....	AM: 530–1710 kHz FM: 88–108 MHz
Speaker Size.....	5 Inches

Specifications are typical; individual units might vary. Specifications are subject to change and improvement without notice.

NOTES

RADIO SHACK LIMITED WARRANTY

This product is warranted against defects for 90 days from date of purchase from Radio Shack company-owned stores and authorized Radio Shack franchisees and dealers. Within this period, we will repair it without charge for parts and labor. Simply **bring your Radio Shack sales slip** as proof of purchase date to any Radio Shack store. Warranty does not cover transportation costs. Nor does it cover a product subjected to misuse or accidental damage.

EXCEPT AS PROVIDED HEREIN, RADIO SHACK MAKES NO EXPRESS WARRANTIES AND ANY IMPLIED WARRANTIES ARE LIMITED IN DURATION TO THE DURATION OF THE WRITTEN LIMITED WARRANTIES CONTAINED HEREIN. Some states do not permit limitation or exclusion of implied warranties; therefore, the aforesaid limitation(s) or exclusion(s) may not apply to the purchaser.

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